

Influential Factors on Language Creativity of College Students in ESL Writing

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Abstract: Writing ability is a very important language output ability. Current studies on second language writing mainly focus on writing text, writing process, writing teaching methods, writing assessment and other aspects. Relatively few studies on writing language creativity focus on the measurement of language creativity in writing. Based on interpretation of China's Standards of English Language Ability (CSE) for writing, this study developed a new scale to explore the factors affecting language creativity in English writing. This scale was used to measure 329 sophomores majoring in English. The data were analyzed by factor analysis and regression analysis. It was concluded that four influencing factors including Thinking Ability, Expressing Ability, Information and Technology Literacy and Knowledge and Cultural Literacy had a positive correlation on writing language creativity in ESL writing, and there was also a correlation between the four factors.

1. Introduction

Writing is regarded as a recursive process involving both cognitive and cognitive skills (Larkin, 2009) and critical for academic and vocational achievement (e.g., Pishghadam et al., 2011). Writing, especially writing creatively has been claimed as a very difficult skill to acquire and dreaded by EFL students (Muthusamy, 2010; Gupta, 1998). In China, creative English writing and its teaching have been flourishing in universities and colleges which race against conventional and examination-oriented writing pattern and teaching. A battery of relevant studies have been also conducted among EFL writing learners in respect of the representation of language creativity, language creativity test, relationship between language creativity and other factors. As to language creativity test, Prabakaran and Dr. Nellaiyapen (2014) measured the the four factors of fluency, flexibility, originality and elaboration of language creativity in Tamil among higher secondary students by using five sub-tests constructed based on Guilford's (1952) and regarded this tool very

useful. Kyungil Kim, Yoonhyoung Lee and Chang H. Lee (2012) studied on the relationship between Korean college students' style of language usage and their creativity by employing a translated version of the English LIWC and the Alternative Use Test (Guilford, 1967) and found that people who scored as more creative also used more content words to express their thoughts and did so in a more straightforward manner, these people who used a greater number of more abstract concepts had a more individualistic perspective and thought in less conventional ways.

In terms of the concrete performance of language creativity, Napitupulu (2005) elaborated language creativity at the lexical level of neology from three aspects of pattern of the neology, the reasons for neology, and the meaning caused by neology, Clark (2006) discussed about language creativity from coining words and the combination of syntactic units. Some other interdisciplinary research perspectives have also drawn attention of professionals: from the linguistic aspect, like research on the relationship of creativity with discourse (Rodney, 2010) and with consistency (Israel, 2002); from the psychological aspect, research on the relationship with personality and situation (Martindale, 1989); from the pedagogical aspect, its relationship with foreign language achievement (Otto, 1998; Sutrisno, 2007; Meera and Remya 2010; Pishghadam et al. 2011) and English Language Teacher Creativity (Pishghadam et al., 2012). Concentration on social and economic influence on language creativity can't be overlooked either. (Punia, 2013; Swann & Deumert, 2017) From above mentioned, it's evident that researches on language creativity have been implemented by professionals from different countries with multidisciplinary perspectives and distinct results. As a gap discovered from these previous researches, factors which influence the language creativity of Chinese college students in ESL writing can be a significant research focus worth of sufficient devotion and experimental verification.

2. Theoretical and Methodological Framework

2.1. The Definition of Language Creativity

In 1949, Guilford (1950) pointed out that we did not know enough about creativity. Through years, although some definitions of creativity have been put forward, a generally acceptable definition for quantitative conclusions on creativity has been still unavailable. Most scholars have reached a consensus on the definition of creativity: there must be a product of some sort and it must be both novel and appropriate or useful in some sense (Martindale, 1989). Bruner (1962) argued that if a creative product generates "effective surprise" and a "shock of recognition", the idea is correct. In Anderson's view (1965), creativity represents the emergence of something unique, exceptional and original, which is similar to the proposal of Muthusamy (2010) that creativity is paralleled with uniqueness, originality, cognitive thinking, problem solving, cultural norms and values and much more. Koestler (1964) explicated that creativity frequently refers not a combination of isolated elements but a connection of two entire "matrices of thought." Amabile (1983) required that the idea should be produced in a heuristic rather than an algorithmic way. Sarbo and Moxley (1994) extended it as a "creative act". Root-Bernstein (1984) and other scholars also made an agreement that creativity is a general rather than a domain-specific trait. Correspondingly, there are also arguments that creativity is regarded more of a tool or device rather than a gift or special ability and thus creativity in language can be learned (Muthusamy et al., 2010). Punia and Niwas (2013) defined language creativity concretely as use of language in different way beyond common people. Napitupulu (2005) differentiated language creativity from the linguistic creativity used by Chomsky who used it in terms of ability to construct and understand an indefinitely large number of utterances (Lyons, 1977). In his article, language creativity is defined

as the creation of new words, or structures which do not exist in the repertoire to name new concepts.(Napitupulu, 2005). It's tentative to extract and refine language creativity in writing from previous definitions that refers to an acquisitive skill obtained by writers to produce something new and different from common use in their writing at the phonological, lexical, syntactical, grammatical, rhetorical and thinking level.

2.2. Purpose of the Study

Based on the above review, there have been a small range of studies on the measurement of language creativity in ESL writing. As a step towards filling the gap, sophomores majoring in English at Guangzhou Institute of Science and Technology (GZIST) in China were taken as the research objects in this study to explore the influence of their thinking ability, expressing ability, information and technology literacy and knowledge and cultural literacy on the language creativity in their ESL writing process.

2.3. Methodology

2.3.1 Participants

A total of 329 students from 11 classes of English majors at GZIST participated in this research. Their mean age was 19.6 yr., 20.4% were men and 79.6% were women. All of them were sophomores who had learned English as a foreign language for at least nine years.

2.3.2 Instruments

A questionnaire was designed under the instruction of experts in this field. With 25 items in the 5 scale Likert type, it was a scale about language creativity of college students in English writing which was adjusted and improved in reference to the description of writing of China's Standards of English Language Ability (CSE) to explore factors impacting students language creativity from three dimensions titled thinking ability, expression ability and language proficiency. This scale was validated through Rasch rating scale model (RSM) and was modified to three-category rating scale considering that the data demonstrated the multidimensionality better. All the data have be processed and analyzed through SPSSAU.

2.3.3 Data analysis

The population of 329 sophomores from English majors in GZIST answered the questionnaire on line made by Wenjuanxing software under the guidance of their English writing teacher in June, 2021, in which semester they had taken English writing course and had got some knowledge and practice of writing. All the data collected from the software showed normal distribution and were valid to be used in the analysis of factors relevant to students' language creativity with $p=0.000<0.05$ after K-S test. After preliminary descriptive analysis of the data, Exploratory Factor Analysis (EFA) was conducted to extract the relevant factors, with which a preset model was built. And then Confirmatory Factor Analysis (CFA) was performed to verify the corresponding relationship and strength between the assumed factors and the measurement items. After confirming the measurement relationship, the specific relationship between each factor and language creativity of ESL writing, and correlations among each factor was analyzed through linear regression analysis. Since this scale was developed with reference to CSE and used to measure the influencing factors of

language creativity in students' English writing, the reliability and validity of the scale needed to be tested. The Cronbach Alpha value of the scale was .954, which reflected that the reliability of the scale was very ideal, with good internal consistency and stability. The KMO value was .955, indicating that there was a large partial correlation between the scale variables. The value of Barlett sphere test was $.000 < 0.05$ and reached the significant level, indicating that the questionnaire had structural validity and the data obtained were suitable for factor analysis. Through principal component analysis, the maximum variance method was selected for factor rotation, and four factors were extracted. After rotation, the cumulative variance interpretation rate was 63.746%, implying that the four dimensions explored at present could represent the whole data well. Observing the specific division of the four dimensions through the rotated component matrix, it was found that the item "using examples, detailed description and other means can enrich the writing content" did not belong to any dimension, which was deleted due to its invalidity. It was found after analysis of the data through SPSSAU, these four factors extracted by EFA were not consistent with anticipated three factors (thinking ability, expressing ability, language proficiency). After cautiously observing and analyzing specific items and factors, the extracted four factors were adopted for analysis of this research. The match of items and factors has been fine-tuned, and factors were renamed respectively: Thinking Ability, Expressing Ability, Information and Technology Literacy and Knowledge and Cultural Literacy which were abbreviated as TA, EA, ITL and KCL respectively in this paper. Based on the relationship between the four extracted factors and the dependent factor Language Creativity (LC) of English writing, a preliminary model is constructed as shown:

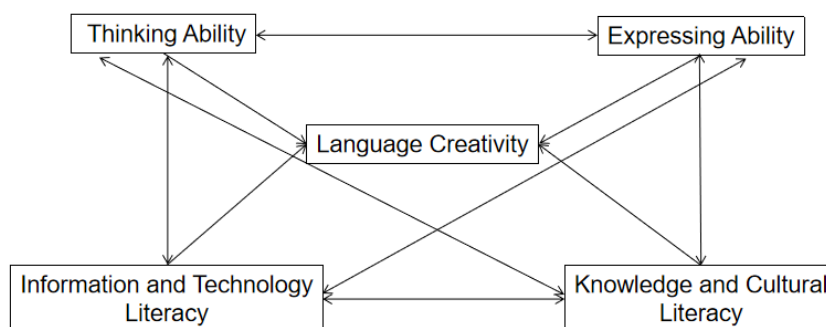


Fig 1: Preset model of relationship between four factors and Language Creativity

In the CFA process of data of retained 24 items, the AVE values of TA and ITL were less than 0.5, indicating that the convergent validity of the four factors needed to be improved. In addition, the AVE square root value of these two factors was less than the absolute value of their correlation coefficients with other factors, and the discriminant validity was less than ideal. Therefore, the items were further adjusted by removing a duplicated item "frequent use of nouns in the English writing form (i.e. nominalization), rather than a verb or other forms can demonstrate language creativity in writing", an item with weak correlation with corresponding factors "repeated modification of composition on the online writing platform such as iWrite can stimulate your new ideas or writing creativity". Then, the item "elaboration, argument, refutation and other methods can help demonstrate the main point of view and show the logicity and speculative thinking" was incorporated into Expressing Ability, and finally a scale of 22 items was formed. The reliability and validity of the re-measured scale were as follows, indicating that the adjusted scale was still very suitable for analysis.

Table 1: KMO and Bartlett Tests

KMO value		0.951
Approximate Chi-Square		4553.944
Bartlett test of sphericity	df	231
	P	0.000

The adjusted scale was used for further confirmative factor analysis. As shown in the following table, AVE values corresponding to the four factors were all greater than 0.5, and CR values were all higher than 0.7, indicating that each factor had good convergent validity.

Table 2: AVE and CR Index Results of the Model

Factor	AVE	CR
Thinking Ability (TA)	0.501	0.833
Expressing Ability (EA)	0.585	0.939
Information and Technology Literacy (ITL)	0.569	0.794
Knowledge and Culture Literacy (KCL)	0.587	0.810

Pearson correlation and AVE square root value were used to test the discriminant validity of factors. AVE square root value of TA was 0.708, that of EA was 0.765, ITL was 0.765, and KCL was 0.766, each of which was greater than the absolute value of correlation coefficient between their factors. It was proved that these four factors had good discriminant validity.

Observing the main indexes of model fitting, CMIN/DF, RMSEA, RMR, CFI and NNFI all met the test standards, indicating that the fitting validity of the overall model was good, and factor covariance test showed that, all values of Std. Estimate were above 0.4, showing that there was a certain correlation between factors. There was a strong correlation between EA and TA, EA and ITL. TA was also related to ITL, KCL to a large extent. The model structure was basically consistent with the original preset of this study.

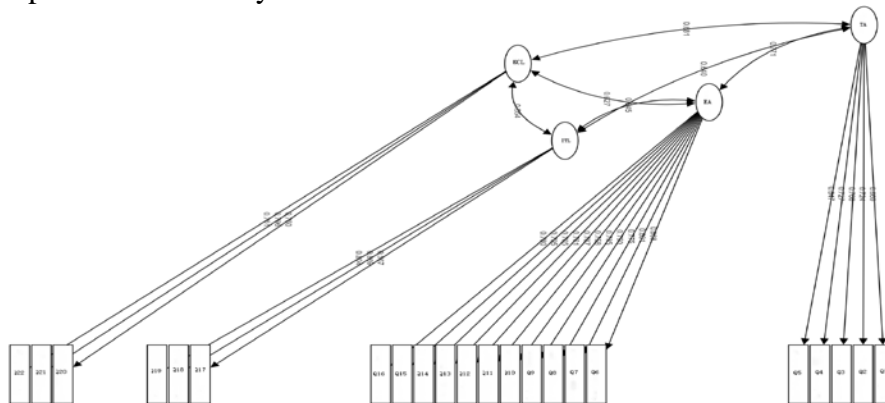


Fig 2: Confirmatory Factor Analysis Model

After the process of EFA and CFA, the relationship, direction and degree of influence of each item on college students' language creativity in English writing were further analyzed by linear regression. R^2 of the model was 1.000, which meant that all variables could explain all of the change of dependent variable ESL Writing Creativity. F test was conducted and found that the model passed the F test ($F=4061668293211663000000000000.000$, $p=0.000<0.05$), which meant that at

least one of the variables may have an impact on ESL Writing Creativity. The multicollinearity of the model was tested and it was found that all VIF values in the model were less than 5, which indicated that there was no collinearity problem. And the value of D-W was 1.803, near the number 2, which indicated that the model did not exist autocorrelation, and there was no correlation between sample data. It's evidenced that the model was good.

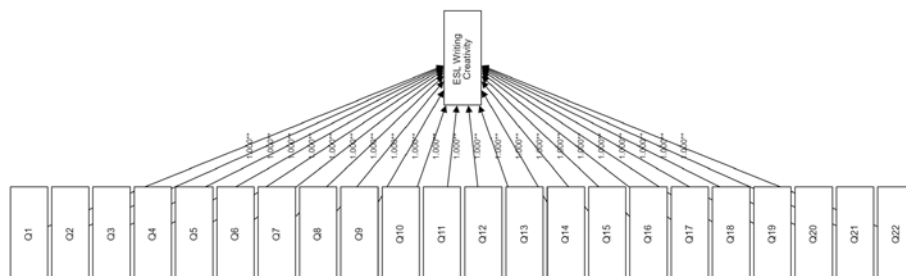


Fig 3: Linear Regression Analysis Model

3. Findings and Discussion

3.1. Relationship between TA and LC

It's demonstrated from the above data analysis that ITL, KCL had a certain influence on students' language creativity in ESL writing, and there was also a certain influence relationship among the four factors. In the scale, students' creative thinking ability in English writing was mainly reflected in creative conceiving, novel viewpoints and critical thinking. This factor corresponded to five items (Q1-Q5) in the scale, and the standard load coefficient (Std.Estimate) of the five items was between 0.6-0.8, indicating that they had a strong correlation with TA. 50%-60% of students thought that it was helpful for thinking creativity in writing to collect various information, extract useful ideas and information, clarify writing purpose, readers and relevant writing requirements, and use different methods to compose the beginning and end of the article. About 60% of students regarded that it was beneficial to discover new ideas and try writing with unique styles by examining and writing from different perspectives. Different perspectives, novel ideas and unique styles not only can show students' creativity in thinking, but also inspire students to express creativity in words in the process of writing.

3.2. Relationship between EA and LC

Language is the vehicle of thought. Once a creative idea is here in the writing, the next most important thing is to use language to express it properly and accurately. In this scale, EA of students in English writing can be subdivided to five aspects: vocabulary, sentence pattern, discourse, rhetoric and writing skills. The standard load coefficients of 11 items (Q6-Q16) covered by this factor were all greater than 0.7, indicating that all items were strongly correlated with the factor EA. Students' innovative use of vocabulary (Q14-Q16) had a great impact on the creativity of writing language. The standard load coefficients of these three items were all around 0.8. 65% to 80% of students thought that the richness and flexibility of vocabulary use in writing could be improved by means of word transformation, synonym substitution and part of speech variation. The use of more specific, vivid words to accurately express the nuances of meaning can enhance the vitality of expression. It should be noted that in the CFA, in order to improve the convergent and discriminant

validity of factors, the item “nouns are often used in English writing rather than verbs or other forms” was removed, but in fact, 71.7% of the students agreed that the use of nominalization reflected the reduction of the negative impact of Chinese thinking and Chinese expression habits, by which made English writing more authentic and presented language novelty in English writing. In addition, students were also generally believed that “flexible employment of diversified sentence patterns according to the context makes the sentences and paragraphs distinctive” (Q10), “the use of appropriate cohesive devices such as reference, substitution, ellipsis can enhance the fluency” (Q12), “the use of appropriate forms such as emphatic sentence, punctuation, font can highlight or draw attention to a point” (Q11). In other words, the diversification of sentence patterns, the fluency of discourse cohesion and the flexibility of punctuation help to show language creativity in writing. About 71% of students agreed that “the use of metaphors, parallelism, contrast, analogy, rhetorical questions and other rhetorical devices for creative expression can enhance the expression effect of an article” (Q13). At writing skills level, through replacement, interpretation and other ways can solve the expression difficulties (Q9), using proper ways as euphemism, satire, toughness shows agreement or disagreement (Q8), using logic, rational and emotional argument enhances persuasiveness of an article (Q7), the integrated use of instruction, comment and refutation dialectically illustrates main viewpoints (Q6). Factor analysis also showed a strong correlation between items Q6-Q9 and impact factor EA. Among the four factors, EA including vocabulary, sentence pattern, discourse, rhetoric and writing skills showed the highest convergent validity (AVE: 0.585, CR: 0.939). Creativity at these five levels can manifest expression creativity in writing. It has a positive effect on improving students’ language creativity in English writing to strengthen their expressing ability.

3.3. Relationship between ITL and LC, KCL and LC

The results of regression analysis showed that each item of factors ITL and KCL had a positive impact on students’ English writing creativity. Through mind mapping, students can not only straighten out their writing ideas, but also construct a composition framework. In the composition, they can use diagrams to show content and relationships, which is also a creative writing skill (Q17). In the current information age, students can obtain the latest information through the Internet, media, books and other channels. They can learn new vocabulary, new expressions, new ideas, new perspectives and new insights, which all become the source of language creativity in their writing (Q18, Q19). In addition, 73% of the students believed that “writing on online writing software such as iWrite can stimulate new ideas and creativity”. Although this item was removed in the factor model fitting for the purpose of improving efficiency, it indicated that writing exercises and assessments on multi-terminal and software platforms were widely used at present. Thus its influence on students’ language creativity in English writing should be considered. In terms of KCL, erudition and application of bilingual culture, proverbs, quotations and other habitual expression in two languages can enhance students’ language creativity in ESL writing (Q20, Q21). The diversity of new vocabulary and sentence, the fluency of discourse can not eventually separate from the solid grammar foundation, students generally believed that the better the grammar was, the less restricted they felt in the process of writing, and the more creative language and expression may be presented (Q22).

3.4. Relationship between the Four Factors

Through confirmatory factor analysis and linear regression analysis, it can be determined that the

four factors had different degrees of relevance and influence on language creativity in English writing, among which EA had the greatest impact, followed by TA. There was also a certain correlation between these four factors. As shown in the table of Factor Covariance, there was a strong correlation between EA and TA (Std. Estimate=0.771), EA and ITL (Std. Estimate=0.845), and TA was also strongly correlated with KCL. Although the correlation between TA and ITL, EA and KCL was weaker than the previous groups, their correlation was still significant; the correlation between KCL and ITL was weaker comparatively. To sum up, students should expand information resources and strengthen knowledge accumulation in the process of writing learning, so as to stimulate thinking creativity and then show language creativity in writing.

4. Conclusion

Different from the studies of other scholars on the four aspects of language creativity in ESL writing, namely fluency, flexibility, originality and elaboration, this paper mainly explored the factors influencing the language creativity of students' English writing. Based on the scale of CSE, a scale was developed to measure the influence factors of language creativity in English writing in 329 English majors. It was found in the analysis that, the four factors refined, TA, EA, KCL and ITL showed a positive influence relationship with dependent variable Language Creativity in English writing, and there was also a correlation between the four factors. EA and TA had a strong influence on students' language creativity in the process of writing, ITL and KCL were conducive to promoting students' TA and EA which then stimulated students' language creativity. It can be inspired from the study that, in the teaching and learning of English writing, the expansion of knowledge and information in the daily learning, the improvement of cross-cultural literacy, the awareness of the richness of vocabulary, the complexity of sentences, the fluency of discourse and the flexibility of writing skills can effectively demonstrate the language creativity and improve the quality of English writing in combination of the use of the feedback function of writing and evaluation software.

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